Date: Thu, 18 Nov 93 04:30:19 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #114
To: Ham-Ant

Ham-Ant Digest Thu, 18 Nov 93 Volume 93 : Issue 114

Today's Topics:

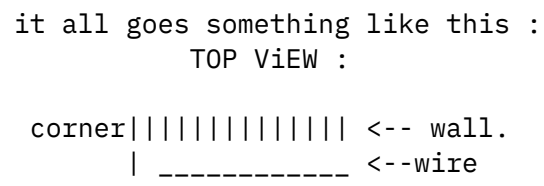
Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

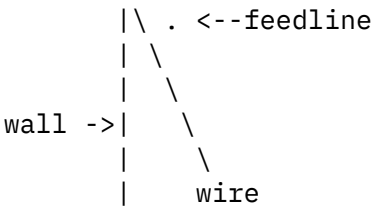
Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

Date: 16 Nov 1993 20:45:38 GMT
From: pipex!sunic!ugle.unit.no!stud.unit.no!kenneth@uunet.uu.net
Subject: Inverted V.
To: ham-ant@ucsd.edu

I'm planning to set up an inverted V, and have heard that the apex angle is
critical. It seems to me that i can't manage more than 80-85 degrees, at least if
the apex angle shall be 0.2 the wavelength above ground. I can manage 110-120
degrees, but then the feed point will not be more than 27 feet above ground.
I also have heard that the end insulators mustn't get to close to lossy ground.

At last, the antenna will be surrounded by walls, like streching the feed line
up the corner of a house, and streching the two wires along the walls.





Comments about :

*** How will the walls affect the radiation pattern.

*** what about the apex angle, too low ??

*** the end insulators high above ground

will be appreciated !!!!

Thanks in advance, once again

Kenneth, LA7GIA.

Date: 17 Nov 93 15:54:17 GMT
From: ogicse!uwm.edu!vixen.cso.uiuc.edu!milo.mcs.anl.gov!ANLVM.CTD.ANL.GOV!B10990@network.ucsd.edu
Subject: Inverted V.
To: ham-ant@ucsd.edu

In article <2cbm44$55f@organpipe.uug.arizona.edu>
hlester@helium.gas.uug.arizona.edu (howard n lester) writes:

>
>Kenneth Opskar <kenneth@stud.unit.no> wrote:
>>I'm planning to set up an inverted V, and have heard that the apex angle is
>>critical. It seems to me that i can't manage more than 80-85 degrees, at least
if
>>the apex angle shall be 0.2 the wavelength above ground. I can manage 110-120
>>degrees, but then the feed point will not be more than 27 feet above ground.
>>I also have heard that the end insulators mustn't get to close to lossy ground.
>>
>>At last, the antenna will be surrounded by walls, like streching the feed line
>>up the corner of a house, and streching the two wires along the walls.
>

>The proximity to the walls/houses may have the most (negative) effect on the
>performance of your antenna, less so the height of the apex and the closeness
>to ground of the ends. An inverted V "must not" be of an angle less than 90
>degrees; I recall 127 degrees is ideal for a 50 ohm match, but I do not think
>this is awfully critical. I'd recommend the 110-120 degree angle setup, not
>the 80-85. Make the antenna legs longer than they "should" be so that you'll
>have some wire to cut off for possible pruning. Thus, two variables are
>present for matching: pruning the antenna leg lengths (by equal amounts), and
>varying the apex angle.
>
>Howard KE7QJ

I'll second all that. I've put up and used a lot of I-Vs, on numerous
bands, under many conditions. They are very UNcritical antennas! They
also are not magic -- they simply are easy to erect and tune (the ends
are easier to prune because they are closer to the ground). In my
experience, they do not perform any better or worse than a standard
flattop dipole.

Gary, K9CZB

Date: Mon, 15 Nov 1993 20:39:46 GMT
From: mdisea!mothost!merlin.dev.cdx.mot.com!davidk@uunet.uu.net
Subject: Uda antenna info
To: ham-ant@ucsd.edu

which suggested reading footnote #5 like it was a simple
matter to obtain. That reference was the following which
if anyone knows how to obtain please let me know. Thanks
in advance.

By Mr Uda,
"Shortwave Projector, Historical Records of My Studies in
Early Days."

Date: 17 Nov 93 16:03:49 GMT
From: ogicse!uwm.edu!math.ohio-state.edu!news.acns.nwu.edu!casbah.acns.nwu.edu!
rdewan@network.ucsd.edu
To: ham-ant@ucsd.edu

References <1993Nov5.061202.27862@ke4zv.atl.ga.us>, <CGLEox.EGo@fc.hp.com>,
<1993Nov16.174711.22720@stsci.edu>
Subject : Re: Tower Guy Anchors

In article <1993Nov16.174711.22720@stsci.edu>,
Phil Hodge <hodge@stsci.edu> wrote:
>
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>: If you can get access to a cable tension gauge, set the guy tension to
>: 50-75 pounds depending on temperature, the tower will "grow" in warm
>: weather so use the higher tension setting then. The guys will loosen in
>: cold weather as the tower shrinks.
>: Gary
>
>Why don't the cables "grow" together with the tower in warm weather?
>Are they made of such different materials that their coefficients of
>expansion are significantly different? For long cables I guess a small
>difference could be significant.
>
>   Phil, WD8PHO

You are neglecting to consider the third leg of the triangle: Ground.
Its expansion is not going to be that of steel. This causes all the
difference. If you take that into account and assume that the expansion
rate of ground is more than that of steel, then as I have shown below,
the tension will increase in warm weather and decrease in cold.

---- Now for some simple math to justify the above statement ------

To simplify, assume that the expansion rate of ground is zero.
Define `cold' and `high' to be some appropriate temperature

height of tower, cold	h
distance from guy anchor to tower	g
expansion rate of steel, from cold to warm	a
expansion rate of ground, from cold to warm	b
guy length needed (constant tension)	sqrt[(1+a)^2*h^2 + (1+b)^2*g^2]
guy length after expansion (const tension) (1+a)*sqrt[h^2 + g^2] =	sqrt[(1+a)^2*h^2 + (1+a)^2*g^2]

So if a < b then tension will be higher in summer. So if there a minimum
tension that is to be maintained then summer installations should be at
a higher tension settings.

Question: Is the expansion rate of ground more than that of steel?

Rajiv
aa9ch
r-dewan@nwu.edu

End of Ham-Ant Digest V93 #114
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